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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/014,993	12/11/2001	Alan B. Touchberry	H16-25558US	3362

7590 01/26/2005  
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EXAMINER

DONG, DALEI

ART UNIT PAPER NUMBER

2879

DATE MAILED: 01/26/2005

Please find below and/or attached an Office communication concerning this application or proceeding.

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# Office Action Summary

Application No.

10/014,993

Applicant(s)

TOUCHBERRY ET AL.

Examiner

Dalei Dong

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-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

## Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

## Status

- 1) ☒ Responsive to communication(s) filed on 20 December 2004.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

## Disposition of Claims

- 4) ☒ Claim(s) 1-3,6,7,9-11 and 27-34 is/are pending in the application.
- 4a) Of the above claim(s) \_\_\_\_\_ is/are withdrawn from consideration.
- 5) ☒ Claim(s) 9 is/are allowed.
- 6) ☒ Claim(s) 1-3,6,10 and 27-34 is/are rejected.
- 7) ☒ Claim(s) 7 and 11 is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

## Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 11 December 2001 is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

## Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some \* c) ☐ None of:
- ☐ Certified copies of the priority documents have been received.
  - ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
  - ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

\* See the attached detailed Office action for a list of the certified copies not received.

## Attachment(s)

- |  |   |
|--|---|
| 1) <input type="checkbox"/> Notice of References Cited (PTO-892)   | 4) <input type="checkbox"/> Interview Summary (PTO-413)<br>Paper No(s)/Mail Date. _____ |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948)                                   | 5) <input type="checkbox"/> Notice of Informal Patent Application (PTO-152)             |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)<br>Paper No(s)/Mail Date _____ | 6) <input type="checkbox"/> Other: _____  |

### DETAILED ACTION

In light of the Response filed December 20, 2004, Examiner withdrew the Final Rejection issued on October 18, 2004, and a non-final rejection is set forth below.

#### *Claim Rejections - 35 USC § 102*

1. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

2. Claims 1 and 10 are rejected under 35 U.S.C. 102(b) as being anticipated by U.S. Patent No. 4,670,691 to Podgorski.

Regarding to claim 1, Podgorski discloses in Figure 1, a system for restricting a getter, comprising in combination: a getter(61) located in a getter well (18 and 24) wherein the getter well (18 and 24) is located in a gyroscope block (10), wherein the getter well (18 and 24) is located at a distance away from an optical cavity (16, 19 and 22) located in the gyroscope block (10); and a hole (17, 20 and 23) located in the gyroscope block between the getter well (18) and the optical cavity (16, 19 and 22), wherein the hole (17, 20 and 23) has a diameter substantially less than a diameter of the getter well. The prior art of record satisfies the claimed structural limitation and thereby capable of limiting gas flow between the getter well and the optical cavity.

Further, the claim “thereby limiting gas flow between the getter well and the optical cavity” is merely an intended use of the apparatus and it has been held that a recitation with respect to the manner in which a claimed apparatus is intended to be employed does not differentiate the claimed apparatus from a prior art apparatus satisfying the claimed structural limitations. *Ex parte Masham*, 2 USPQ2d 1647 (1987).

Regarding to claim 10, Podgorski discloses in Figure 1, a method for restricting a getter comprising in combination: drilling a getter well (18 and 24) through the top of a gyroscope block, wherein the getter well is located at a distance way from an optical cavity (16, 19 and 22) in the gyroscope block; inserting a getter (61) into getter well (18 and 24); and drilling a hole (17, 20 and 23) having a diameter substantially less than a diameter of the getter well between the getter well and the optical cavity, wherein the hole limits gas flow between the getter well and the optical cavity.

### ***Claim Rejections - 35 USC § 103***

3. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

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4. Claims 2, 3 and 6, are rejected under 35 U.S.C. 103(a) as being unpatentable over U.S. Patent No. 4,670,691 to Podgorski in view of U.S. Patent No. 5,056,102 to Galbrecht.

Regarding to claim 2, Podgorski discloses in Figure 1, a system for restricting a getter, comprising in combination: a getter(61) located in a getter well (18 and 24) wherein the getter well (18 and 24) is located in a gyroscope block (10), wherein the getter well (18 and 24) is located at a distance away from an optical cavity (16, 19 and 22) located in the gyroscope block (10); and a hole (17, 20 and 23) located in the gyroscope block between the getter well (18) and the optical cavity (16, 19 and 22), wherein the hole (17, 20 and 23) has a diameter substantially less than a diameter of the getter well. The prior art of record satisfies the claimed structural limitation and thereby capable of limiting gas flow between the getter well and the optical cavity.

Further, the claim "thereby limiting gas flow between the getter well and the optical cavity" is merely an intended use of the apparatus and it has been held that a recitation with respect to the manner in which a claimed apparatus is intended to be employed does not differentiate the claimed apparatus from a prior art apparatus satisfying the claimed structural limitations. *Ex parte Masham*, 2 USPQ2d 1647 (1987).

However, Podgorski does not disclose the getter is composed of a barium alloy. Galbrecht teaches in Figure 3, the getter is composed of a barium alloy (see column 2, lines 50-53) for the purpose of removing contaminant gases from the gas discharge cavity.

It would have been obvious to one having ordinary skill in the art at the time the invention was made to have made the getter material of Podgorski with the barium alloy of Galbrecht in order to efficiently and effectively removing contaminant gases from the gas discharge cavity.

Regarding to claim 3, Galbrecht teaches the getter removes non-inert gases from the optical cavity.

Regarding to claim 6, Podgorski discloses in Figure 1, a snap ring (63) holds the getter (61) in the getter well (18 and 24).

5. Claims 27-34 are rejected under 35 U.S.C. 103(a) as being unpatentable over U.S. Patent 4,740,985 Podgorski.

Regarding to claim 27, Podgorski discloses in Figure 2, a system for restricting a getter (250), comprising a diffusion barrier (216), wherein the diffusion barrier reduces a rate at which the getter absorbs non-inert gas (see column 2, line 50 to column 3, line 2).

However, Podgorski does not disclose the diffusion barrier (260) located on the getter (250). Podgorski teaches the diffusion barrier to cover the getter material in order to allow minute gas to permeate through.

It would have been obvious to one having ordinary skill in the art at the time the invention was made to have place the diffusion barrier on the getter material in order to allow low permeable to gas in very minute quantities.

Regarding to claim 28 it is old and well known in the art to utilize a barium alloy as the getter material for discharge device with inert gas, and further Applicant has disclosed that barium and titanium or zirconium alloys can used interchangeably as the getter material, and Podgorski teaches the use of titanium alloy as the getter material in column 2, lines 47-48. Furthermore, Podgorski discloses the claimed invention except for the getter composed of a barium alloy. It would have been obvious to one having ordinary skill in the art at the time the invention was made to have utilize the barium alloy, since it has been held to be within the general skill of a worker in the art to select a known material on the basis of its suitability for the intended use as a matter of obvious design choice. In re Leshin, 125 USPQ 416.

Regarding to claim 29, Podgorski discloses the getter removes non-inert gases from a cavity.

Regarding to claims 30, Podgorski discloses the claimed invention except for the diffusion layer is composed of barium nitride. It would have been obvious to one having ordinary skill in the art at the time the invention was made to have utilize barium nitride as the diffusion barrier, since it has been held to be within the general skill of a worker in the art to select a known material on the basis of its suitability for the intended use as a matter of obvious design choice. In re Leshin, 125 USPQ 416.

Regarding to claim 31, Podgorski discloses in Figure 2, a system for restricting a getter (250), comprising a diffusion barrier (216), wherein the diffusion barrier reduces a rate at which the getter absorbs non-inert gas (see column 2, line 50 to column 3, line 2).

However, Podgorski does not disclose the diffusion barrier (260) located on the getter (250). Podgorski teaches the diffusion barrier to cover the getter material in order to allow minute gas to permeate through. Further, it is old and well known in the art to compose the getter material with barium nitride.

It would have been obvious to one having ordinary skill in the art at the time the invention was made to have utilize the old and well known barium nitride as the getter of Podgorski and place the diffusion barrier on the getter material in order to allow low permeable to gas in very minute quantities.

Regarding to claim 32, Podgorski discloses in Figure 2, a system for restricting a getter (250), comprising a diffusion barrier (216), wherein the diffusion barrier reduces a rate at which the getter absorbs non-inert gas (see column 2, line 50 to column 3, line 2).

However, Podgorski does not disclose the diffusion barrier (260) located on the getter (250). Podgorski teaches the diffusion barrier to cover the getter material in order to allow minute gas to permeate through.

It would have been obvious to one having ordinary skill in the art at the time the invention was made to have place the diffusion barrier on the getter material in order to allow low permeable to gas in very minute quantities.



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Regarding to claim 33, the method of forming the diffusion barrier is not germane to the issue of patentability of the method for restricting a getter.

Therefore, this limitation has not been given patentable weight.

Regarding to claim 34, the method of forming the diffusion barrier is not germane to the issue of patentability of the method for restricting a getter.

Therefore, this limitation has not been given patentable weight.

*Allowable Subject Matter*

6. Claims 7 and 11 are objected to as being dependent upon a rejected base claim, but would be allowable if rewritten in independent form including all of the limitations of the base claim and any intervening claims.

7. The following is a statement of reasons for the indication of allowable subject matter:

Regarding to claim 7, prior art of record taken alone or in combination fails to teach or suggest the hole is substantially 0.020 inches in diameter and 0.170 inches long in order to restrict the rate at which a getter consumes impurities while maintaining the purity of the lasing gas mixture.

Regarding to claim 11, prior art of record taken alone or in combination fails to teach or suggest the hole is substantially 0.020 inches in diameter and

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0.170 inches long in order to restrict the rate at which a getter consumes impurities while maintaining the purity of the lasing gas mixture.

8. Claim 9 is allowed.

9. The following is an examiner's statement of reasons for allowance:

Regarding to claim 9, prior art of record taken alone or in combination fails to teach or suggest the hole is substantially 0.020 inches in diameter and 0.170 inches long in order to restrict the rate at which a getter consumes impurities while maintaining the purity of the lasing gas mixture.

Any comments considered necessary by applicant must be submitted no later than the payment of the issue fee and, to avoid processing delays, should preferably accompany the issue fee. Such submissions should be clearly labeled "Comments on Statement of Reasons for Allowance."

### **Response to Arguments**

10. Applicant's arguments filed December 20, 2004 have been fully considered but they are not persuasive.

In response to Applicant's argument that cavities 17, 20 and 23 are optical cavities. However, Examiner interprets that a hole is merely a cavity within something solid and thus Examiner interprets that the cavities 17, 20 and 23 are within the solid block 15 as "holes". Also, Applicant merely claims "an optical

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caivty" , and hence Examiner interprets "an optical cavity" as either one of optical cavities of 16, 19 and 22. Futhermore, even if cavities 17, 20 and 23 are optical cavities, however, nowhere in the claim does the Applicant specifiy that the "hole" can not be an optical cavity within the solid block 15. Thus, Examiner asserts that the prior art of record teaches the claimed invention and maintains the rejection.

Also, in response to Applicant's argument that if there was a hole located between the getter well and the optical cavity having a diameter less than the diametere of the getter well, the sputtering of the getter material would be restricted, impacting the ability to form a uniform getter film on the cavity walls. Examiner asserts that the sputtering of the getter material would not be restricted. The getter film would formed uniformly on the hole or cavity walls of 17, 20 and 23, and by interconnecting the optical cavities of 16, 19 and 22, any impurities generated would flow through the hole or cavity walls of 17, 20 and 23 and being absorbed by the uniform getter film and hence achieve the objective of restricting the getter material released into the optical cavity. Thus, Examiner asserts that the prior art of record does not teach away from a hole located between the getter well and the optical cavity having a diameter substantially less than a diameter of the getter well.

Further, in response to Applicant's argument that prior art of record fails to teach or suggest a diffusion barrier located on the getter, which reduces the rate at which the getter absorbs non-inert gases. Examiner asserts that the end cover would completely cover the passageway between the getter cavity and the lasing

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cavity. As shown, in Figure 2 of Podgorski '985, where the end cover is wide enough to cover the entire passageway between the getter cavity and lasing cavity, and thus when the end cover is placed on top of the getter material the end cover would still be wide enough to cover the entire passageway between the getter cavity and the lasing cavity. Therefore, it would have been obvious to one having ordinary skill in the art at the time the invention was made to have rearrange the end cover on top of the getter material while maintaining width wide enough to cover the entire passageway between the getter cavity and the lasing cavity to prevent the getter from entering into the lasing cavity as taught by Podgorski '985, since it has been held that rearranging parts of an invention involve only routine skill in the art. In re Japikse, 86 UPSQ 70. Furthermore, prior art of record does teach reducing the rate at which the getter absorbs non-inert gases, as shown in Figure 2, the end cover restrict the flow of non-inert gases into the getter cavity (see column3, lines 40-47) and thus reduces the rate at which the getter absorbs non-inert gases. Therefore, Examiner asserts that the prior art of record is valid and maintains the rejection.

### ***Conclusion***

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Dalei Dong whose telephone number is (571)272-2370. The examiner can normally be reached on 8 A.M. to 5 P.M..

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Nimeshkumar Patel can be reached on (571)272-2457. The fax phone

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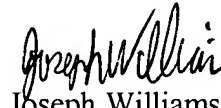
number for the organization where this application or proceeding is assigned is 703-872-9306.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).



D.D.

January 21, 2005



Joseph Williams  
Primary Examiner  
Art Unit 2879